ALCATEL, THE NEW THREAT TO AT&T

RALPH NADER RESPONDS

HOW BELEAGUERED BILL FUGAZY LIVES IT UP

OCTOBER 29, 1990 FOUR DOLLARS

Forbes

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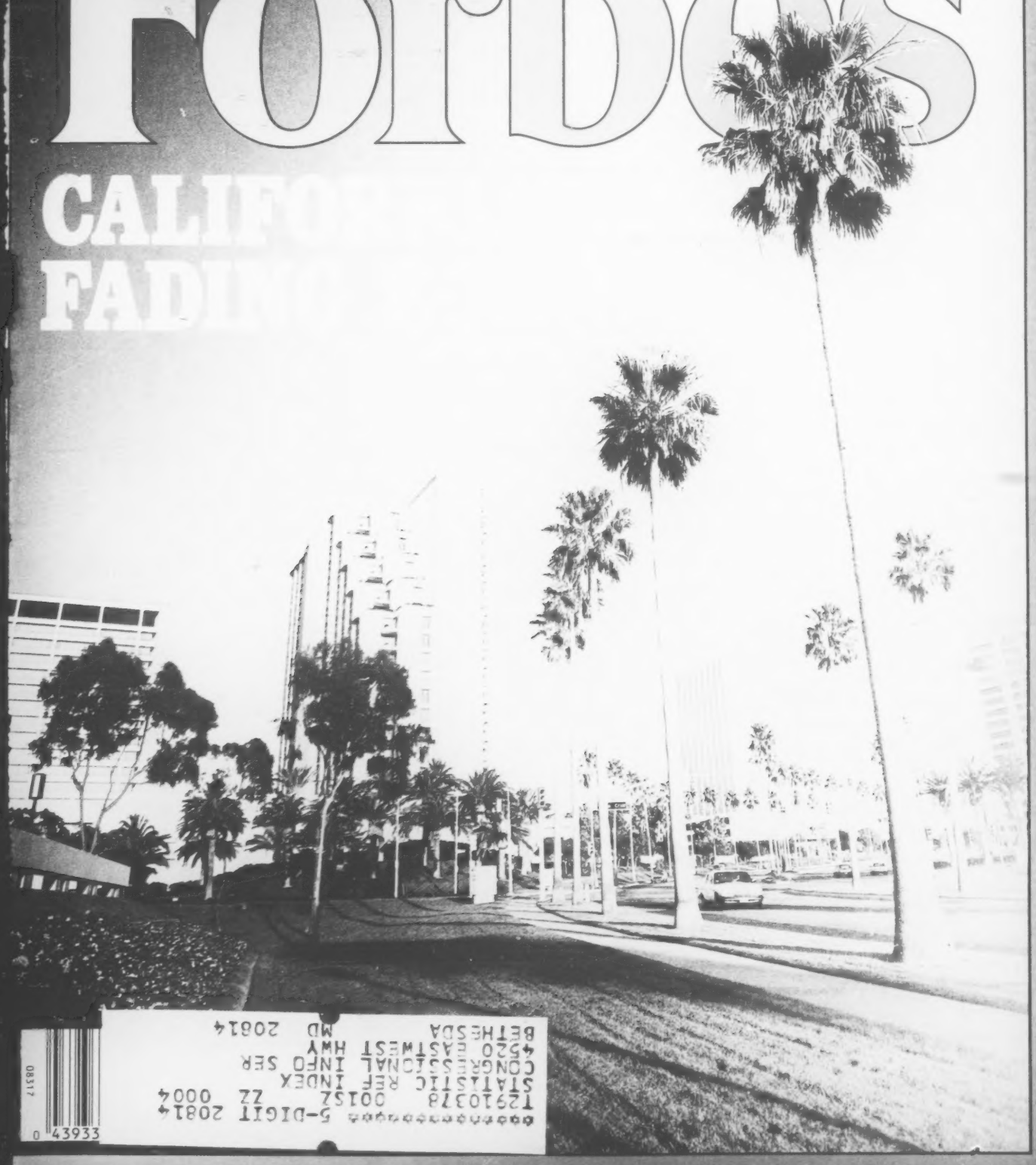

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VOLUME 146
NUMBER 10

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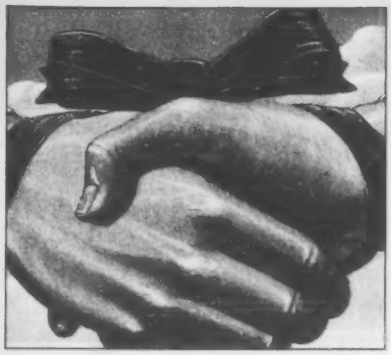

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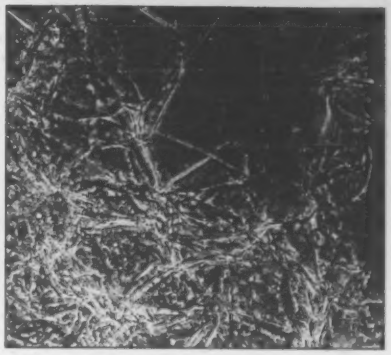

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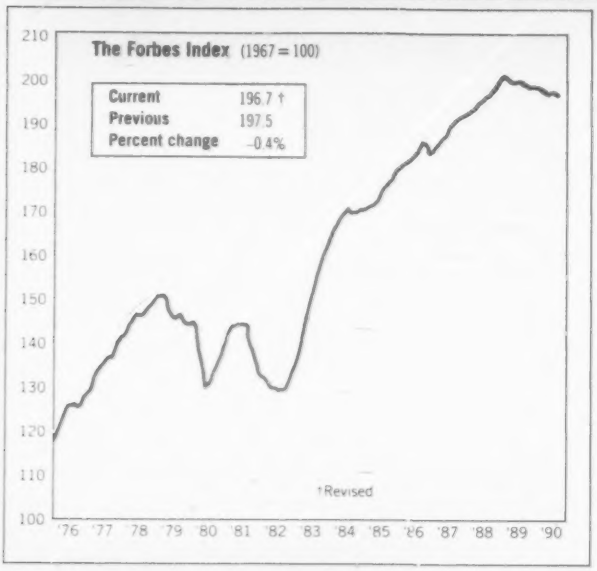
The Forbes Index



Recessionary numbers surface. Manufacturers' new orders fell 0.5% in August, while inventories were unchanged from the previous month. The latest inventory figure actually stands 0.7% lower than it did in January. Personal income grew only slightly from July to August. However, after adjusting for inflation, personal income is down 2.6% from a year ago. Meanwhile, nonfarm payrolls fell for the third consecutive month, as the unemployment rate rose to 5.7% in September. The preliminary Forbes Index for August shows a 0.4% decline.

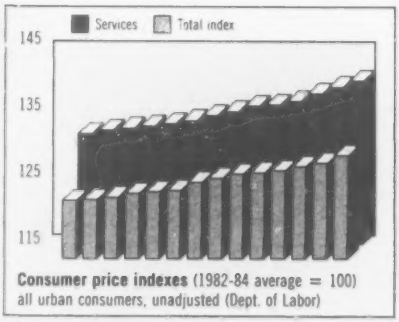
Other key rates	Source	Status
Prime rate	Chase Manhattan Bank	10.0%
Auto sales year to date vs. 1989[1]	Ward's Automotive	-5.4%
Index of leading indicators August vs. July	Dept of Commerce	-1.2%
Trade balance 12 months ended July 1990	Dept of Commerce	-$101 bil
Producer price index August vs. 1989[2]	Dept of Labor	5.1%
GNP 2nd quarter vs. 1st—annualized growth	Dept of Commerce	0.4%
NBER Experimental Recession Probability Index[3]	Natl Bureau of Economic Research	3.0%

[1]U.S.-based manufacturers, excludes imports, as of 9/30/90. [2]Finished goods. [3]August 1990.

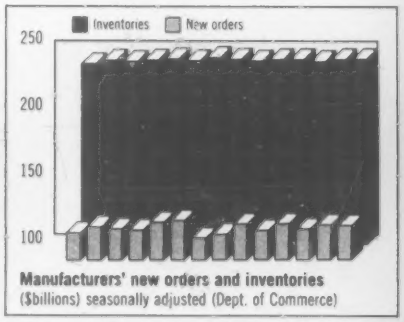
Index Components

The Forbes Index is a measure of U.S. economic activity composed of 8 equally weighted elements. Total industrial production, new claims for unemployment compensation, the cost of services relative to all consumer prices, new housing starts, total retail sales, the level of new orders for durable goods compared with manufacturers' inventories, personal income, total consumer installment credit.

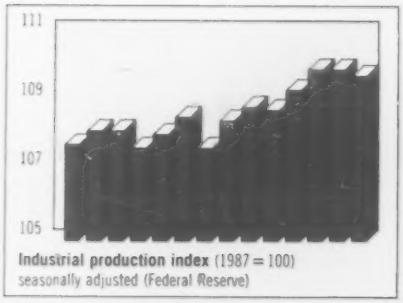
To measure these 8 elements, FORBES monitors 10 series of U.S. government data. The last 14 months' data for each series are presented below.



Consumer price indexes (1982-84 average = 100) all urban consumers, unadjusted (Dept. of Labor)

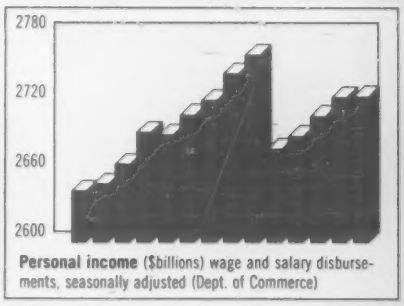


Manufacturers' new orders and inventories ($billions) seasonally adjusted (Dept. of Commerce)



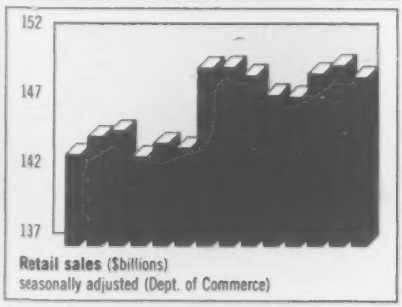
Industrial production index (1987 = 100) seasonally adjusted (Federal Reserve)

New housing starts (thousands) privately owned, unadjusted (Dept. of Commerce)



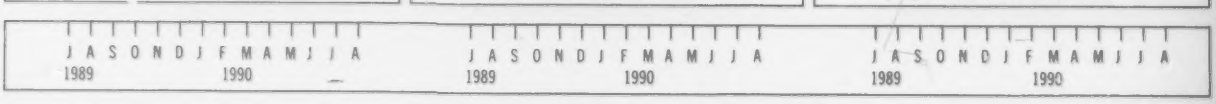
Personal income ($billions) wage and salary disbursements, seasonally adjusted (Dept. of Commerce)

New unemployment claims average for month (thousands) seasonally adjusted (Dept. of Labor)



Retail sales ($billions) seasonally adjusted (Dept. of Commerce)

Consumer installment credit ($billions) total, seasonally adjusted (Federal Reserve)



Science & Technology

Edited by Gary Slutsker

Let the rest of the biotech industry seek a cure for cancer. Genencor International is using its biotech skills to turn new blue jeans into worn blue jeans.

Enzyme-eaten jeans

By Seth Lubove

DID YOU EVER WONDER how "stone-washed" jeans get to look worn before they ever are? The old, expensive way is to put them in an industrial washing machine with a bunch of rocks. But it's a fairly laborious process. You have to pay people to pull pebbles out of pockets.

Much more efficient is a technique devised by Genencor International, a biotech firm that used to be part of Genentech. Genencor designed a bacterial enzyme that breaks down cellulose, the molecular building block of cotton and wood. The enzyme munches on cotton fibers, softening them and releasing some of the indigo dye. Which jeans manufacturers are using the denim-eating enzymes? Genencor's customers would rather you didn't know. Bacteria and enzymes aren't always such good selling points.

Solving the problems of stone-washed jeans might not win a Nobel Prize for any of Genencor's 51 Ph.D.s, but that doesn't seem to bother this company. Genencor is one of the five biggest biotech companies in the country, with projected sales this year of $100 million—compared to last year's $70 million—and an established annual growth rate of 25% to 30%. Molecular biology graduates of schools like MIT and Stanford, some with postgraduate degrees, are among its 450 employees.

Yet, in spite of its successes and future promise, Genencor has remained a stepchild in the biotech industry. Genentech didn't want things like denim-eating enzymes to distract it from curing cancer and heart disease. Thus, Genencor was formed in 1982 as a joint venture between Genentech and Corning Inc., which had been trying to develop an in-house biotech division.

But Genentech never did want to have much to do with its industrial sibling, situated over a nearby hill in industrial South San Francisco. So, earlier this year, when Eastman Kodak and Finnish enzyme firm Cultor Ltd. offered to buy them out, Genentech, Corning and a later partner took the money.

Meanwhile, Genencor's scientists have created a nice business for themselves, making specialized enzymes that help companies shave a few cents off their manufacturing processes. Take apple juice. Press a ton of apples, and you end up with 150 gallons of juice and a lot of skin, seeds and core. Genencor engineers came up with bugs that produce enzymes which then turn the pomace into microscopic bits that are usable in juice. The result: Now you can get 208 gallons per ton, a 39% yield improvement.

Solving seemingly mundane problems like these requires real creativity. Genencor researchers specialize in developing enzymes that eat specific protein molecules. Once the scientists isolate and reproduce a new enzyme using genetic and protein engineering techniques, the marketing department goes into action, searching for industrial or food preparation processes that incorporate the protein the enzyme attacks.

For example, Genencor's re-

Biotech leaders

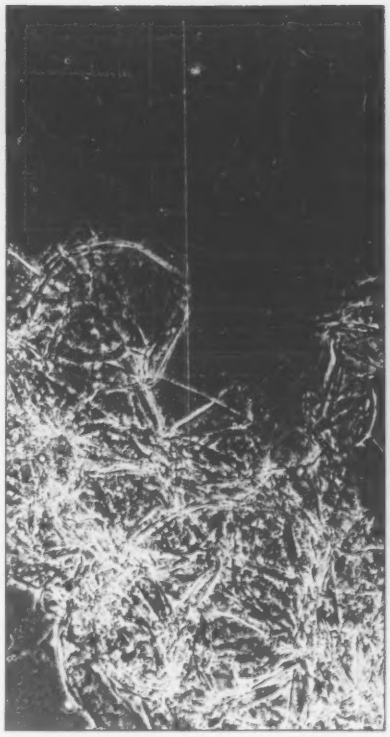
Genencor, though not publicly traded, probably ranks fourth in sales among the biotech firms. Unlike its larger competitors, Genencor specializes in industrial applications.

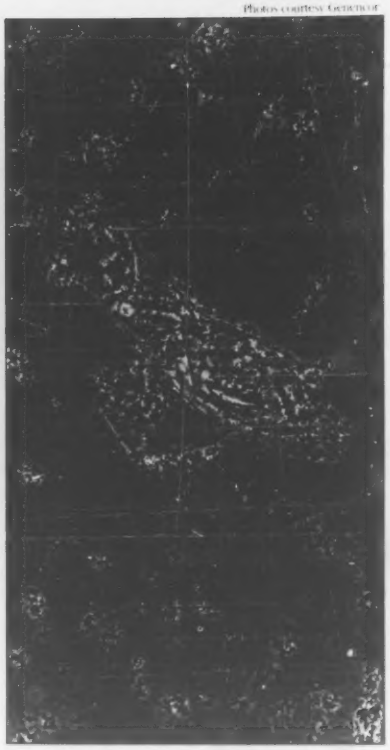
Company	Sales	Profit	R&D
	($millions)		
Amgen	$152.2	$19.1	$62.5
Biogen	40.9	3.2	NA
Centocor	27.6	0.1	45.4
Cetus	25.2	–49.9	49.4
Chiron	35.5	–21.6	46.1
Genencor Intl*	70.0	NA	25.0
Genentech	400.5	44.0	156.9
Genetics Institute	43.6	–28.7	NA
Genzyme	23.8	–13.0	15.0
Life Technologies	134.2	13.2	11.3

*Company is privately held. NA: Not available.

Photos courtesy Genencor

Ed Kashi





A technician prepares enzymes from a tank (far left); pomace before treatment with enzyme (above) and after (right), magnified 100 times

Squeezing a little more from an apple.

searchers had produced an enzyme that dines on a protein found in grains like wheat and barley. The protein, beta-glucan, is a gummy substance that absorbs and retains water. Genencor's insight was in figuring out how its enzyme could save money for bran muffin bakers. When the enzyme breaks down the beta-glucan molecules, water is released. With less water in the batter, baking times are reduced as much as 20%.

"Oftentimes the baker doesn't even know he has a problem," says John Burr, marketing vice president. "We start calling on wheat starch makers, and tell them we have an enzyme that will probably give them more efficiency in their process."

Before genetic engineering, the enzyme business was a matter of turning over rocks and collecting soil samples from odd places, in search of a microbe strain that would produce a useful enzyme. With genetic and protein engineering, enzymes are custom-made. And they can be designed to have special characteristics, such as the ability to withstand the temperature extremes in a baker's oven or the acidity of fruit juices.

You custom design a new enzyme by pinpointing and restructuring the amino acids that give an existing enzyme its character. At Genencor's labs, researchers shoot an X ray through an enzyme molecule, then feed the data into a computer that creates a three-dimensional graphic display. Studying the enzyme, they look for the active amino acids, then simulate the effect of substituting one for another. A DNA sequence, or genetic code, can then be reverse-engineered from the enzyme. When that sequence is inserted into a strain of bacteria, the bacteria produce the desired enzyme. The reiggered bacteria are mass-produced in Genencor's fermenters.

Ed Kashi

Genencor's Robert Leach

Muffin and blue jean biotechnology.

Some of Genencor's enzymes have turned into very big sellers. In the next few years its enzymes that eat blood and grass stains on clothing could account for as much as $100 million in annual sales to manufacturers of laundry detergent.

"The industrial biotech industry is where the computer chip industry was in 1955," says Robert Leach, Genencor's chief executive officer. "Nobody knows the potential." ■

The Forbes Wall Street Review

By Eric S. Hardy

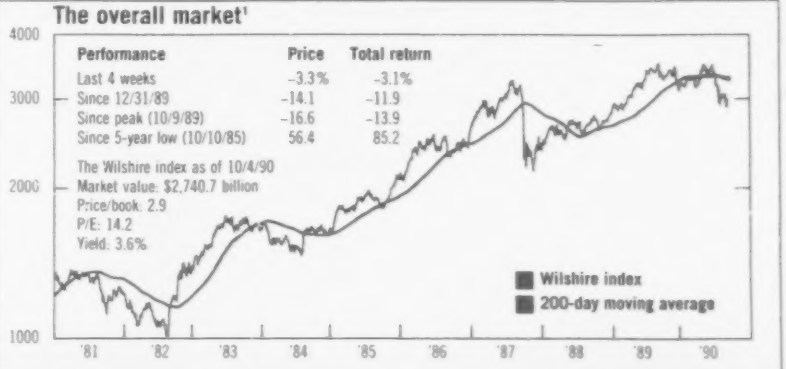
Are there any optimists left on Wall Street? Here's one. "I turned positive [the last week of September] after discovering that more than half the investment advisers are bearish. The future direction in oil prices is down, since there's still excess supply," says A.C. Moore, senior vice president at Argus Research in New York. Moore also cites recent technical indicators, including low advance-to-decline ratios and an unusually high number of stocks hitting new lows, as further evidence of an oversold condition.

Nonetheless, Moore recommends a defensive investment strategy. His favorite group is the consumer nondurable sector, particularly food and beverage stocks such as General Mills, PepsiCo and Archer Daniels Midland. He also likes drug stocks such as Johnson & Johnson, Merck & Co. and Bristol Myers-Squibb.

The Wilshire index is up 56% from five years ago, which translates into a 9.4% compounded average annual return. Dividends add another 4% per year. By contrast, riskless five-year Treasurys posted an annual return of 10.1% over the period.

High-technology issues dominate the list of worst-performing stocks during the past two weeks. Storage Technology, Sun Microsystems and Unisys were big losers. September volume on the NYSE fell 19%, the sharpest monthly drop this year, and a bearish technical indicator.

The overall market[1]



The Best Performing Stocks

Company	Price	2-week change	P/E	Avg vol (thou)[2]	Rel vol[3]
MCA	62¾	74%	19	9,389	4.1
Contel Cellular	14	37	NM	707	1.2
Student Loan Marketing	45	16	17	3,270	0.7
Lotus Development	17	15	7	4,085	0.6
Federal Natl Mortage	29	15	7	12,561	1.0

The Worst Performing Stocks

Company	Price	2-week change	P/E	Avg vol (thou)[2]	Rel vol[3]
Unisys	3½	-49%	NM	19,718	3.6
Figgie Intl	17½	-34	6	25	0.7
Sun Microsystems	19	-33	16	16,433	1.5
Household Intl	25⅛	-25	4	2,539	2.2
Storage Technology	12	-23	6	3,121	0.9

Closeup on the Market

Index or investment	Price	2-week change
Wilshire index 6,000 stocks, capitalization weighted	2,937.16	-0.5%
Wilshire index 6,000 stocks, equal weighted	17.45	-3.2
Dow Jones industrials 30 stocks, divisor-adjusted price average	2,516.83	-0.1
S&P 500 Capitalization weighted cross section, major stocks	312.69	0.4
NYSE Capitalization weighted, all listed common stocks	171.33	0.1
Amex Capitalization weighted total return: stocks, warrants	308.14	-2.9
Nasdaq Capitalization weighted, all issues except warrants	349.89	-4.0
Amex international market index Capitalization weighted, 50 largest ADRs	297.60	3.7

Index or investment	Price or rate	2-week change
Europe, Australia, New Zealand and Far East[4] (EAFE) a dollar denominated capitalization weighted index	769.70	-0.7%
Institutional[5] Approximately 200 stocks with high institutional ownership	88.71	-3.3
Individual[5] Approximately 200 stocks with low institutional ownership	85.38	-2.5
Russell 2000 index 2000 stocks with small market values, capitalization weighted	127.72	-5.2
Gold[6] (composite quote of 6 major dealers)	$392.70	0.8
Yen[6] (per $U.S.)	133.70	-2.9
Commodity index[6] (CRB futures index, 1967 = 100)	239.70	1.1
Oil[6] (W Texas Intermediate)	$36.95	6.5
T bills[3] (90 days)	7.12%	-25 basis points[7]
Broker loan rate[6]	9.25%	unchanged

Note: All data for periods ending 10/4/90. Wilshire index reflects price performance. It differs slightly from market value of outstanding stocks because of retirements of equity since index was created. Stocks listed above have market capitalizations of $500 million or more. [1]Capitalization weighted, prepared by Wilshire Associates, Santa Monica, Calif. [2]Average daily volume over a 2-week period. [3]Average daily volume over the last 2 weeks, divided by the average daily volume over the preceding 3 months. [4]Morgan Stanley Capital International Perspective. [5]For period ending 10/5/90. A. Arbel, Cornell University, using Ford Database from Ford Investor Services. [6]Knight-Ridder Financial Information. [7]A basis point is equal to one-hundredth of a percentage point. NM: Not meaningful.

New Issues Review

By Robert Balancia

The biggest[1]

Company/business	Exchange	Offer date	Offer price	Recent price	Offering ($mil)	Lead underwriter	Performance to date absolute	Performance to date rel to mkt[2]
BJ Svcs/oilfield svcs	N	7/20/90	20	24 ¼	$135	First Boston	21%	139
Banner Aerospace/aerospace	N	7/26/90	14	8 ¾	105	Salomon Brothers	–38	71
Offshore Pipelines/marine construction	N	7/25/90	17	12 ½	49	Prudential-Bache	–26	83
Orthopedic Svcs/rehabilitation svcs	O	7/10/90	16	11 ¼	48	Lehman Brothers	–30	80
Coho Resources/oil & gas exploration	O	7/26/90	13	13 ⅝	46	Salomon Brothers	5	118
Wet Seal/women's apparel	O	7/3/90	14 ¼	12	43	First Boston	–16	96
Vintage Petroleum/oil & gas exploration	N	8/3/90	10 ½	9 ⅞	42	Dillon Read	–6	103
Foundation Health/healthcare svcs	A	7/11/90	12 ½	10 ¾	41	Merrill Lynch	–14	99
Grant Norpac/oil & gas exploration	O	9/19/90	10 ¼	9 ¾	41	Salomon Brothers	–5	96
Environmental Elements/environ controls	O	7/13/90	16 ½	14 ¼	41	Kidder Peabody	–14	101

Performance Update

It was good while it lasted. The new issues market came in very strong in the first half, weakened in the third quarter as the market crashed, and may well shrivel in the last quarter of the year.

Securities Data Co. reports that in the first three quarters of 1990 new issues underwriters raised $3.9 billion and put out 110 new issues priced at $2.50 a share or higher and with an offering value of at least $5 million. Those dollar and issue figures are 22% and 55% higher, respectively, than for the first three quarters of 1989.

The energy sector was quite active even before the crisis in the Persian Gulf. Over the last 12 months more than $1 billion was raised, as 17 oilfield service companies went public. Five of those offerings took place last quarter. BJ Services of Houston was the largest new issue during the period; it raised $135 million.

Although investors were dumping many seasoned technology stocks, two of the best-performing new issues last quarter were software issues. Marcam, a Boston developer of processed manufacturing software, was taken public by Hambrecht & Quist and has since climbed 22%. Robertson Stephens underwrote a $13 million offering for Easel, a software developer and wholesaler in Woburn, Mass.; this stock is up 6%.

The best[1]

Company/business	Offer price	Offering ($mil)	Lead underwriter	Performance to date absolute	Performance to date rel to mkt[2]
Marcam/software	14	$18	Hambrecht & Quist	22%	129
BJ Svcs/oil & gas svcs	20	135	First Boston	21	139
Pamida Hldgs/retail stores	5	8	Merrill Lynch	20	121
Failure Grp/consulting svcs	13	26	Prudential-Bache	17	122
Easel/software	8	13	Robertson Stephens	6	115

The worst[1]

Company/business	Offer price	Offering ($mil)	Lead underwriter	Performance to date absolute	Performance to date rel to mkt[2]
In-Store Advertising/billboards	19	$38	Alex Brown & Sons	–81%	22
IKOS Sys/computer sys	6½	20	Alex Brown & Sons	–71	30
O'Charley's/restaurants	9	23	Alex Brown & Sons	–46	61
Banner Aerospace/aerospace	14	105	Salomon Brothers	–38	71
Trimble Navigation/navig equip	10	30	Smith Barney	–33	78

The most active investment bankers[1]

Underwriter	Total offerings	Total raised ($mil)
Goldman Sachs	10	$1,077
Alex Brown & Sons	23	595
First Boston	6	527
Morgan Stanley	9	392
Prudential-Bache	6	376

Industries going public[1]

Industry	Total offerings	Total raised ($mil)
Oil & gas svcs	17	$1,026
Magazine publishing	1	420
Computer systems	9	288
Software	12	244
Insurance	3	210

Notes: Initial public offerings of common equities with offer date of 7/1/90 to 9/30/90, offering price of $2.50 or more and offering value of $5 million or more. Closed-end funds, limited partnerships, and ADS (American Depositary Shares) of corporations already traded in foreign countries are excluded, as are REITs and spinoffs. [1]Last quarter. [2]The ending value of $100 invested in the stock, divided by the ending value of $1 invested in the market. [3]Latest 12 months. Source: Securities Data Co.